

Amendments to the Claims

The listing of claims will replace all prior versions and listings of claims in the application.

Claim 1. (Currently Amended) A valve fuel cell system comprising:

a fuel supply;

a fuel cell adapted to provide electricity; and

a valve comprising

a first valve component connectable connected to one of either [[a]] the fuel supply or [[a]] the fuel cell,

a second valve component connectable connected to the other of either [[a]] the fuel supply or [[a]] the fuel cell,

wherein each valve component comprises a housing and a biased slidable inner body, and wherein the slidable inner body cooperates with a sealing member to form an internal seal in each valve component, and wherein during connection the first valve component and the second valve component form an inter-component seal at least before the internal seals open to create a fluid flow path through the valve.

Claim 2. (Currently Amended) The valve fuel cell system of claim 1, wherein the first valve component is connected to the fuel supply and the second valve component is connected to the fuel cell.

Claim 3. (Currently Amended) The valve fuel cell system of claim 1, wherein the first valve component is connected to the fuel cell and the second valve component is connected to the fuel supply.

Claim 4. (Withdrawn – Currently Amended) The valve fuel cell system of claim 1, wherein the slidable inner body is a sphere.

Claim 5. (Currently Amended) The valve fuel cell system of claim 1, wherein the slidable inner body comprises a pushrod.

Claim 6. (Currently Amended) The valve fuel cell system of claim 1, wherein the slidable inner body is biased by a spring.

Claim 7. (Currently Amended) The valve fuel cell system of claim 6, wherein the spring is made from stainless steel.

Claim 8. (Withdrawn – Currently Amended) The valve fuel cell system of claim 6, wherein the spring is made from an elastomeric material.

Claim 9. (Withdrawn – Currently Amended) The valve fuel cell system of claim 8, wherein the elastomeric material comprises ethylene propylene, nitrile rubber, ethylene propylene diene methylene terpolymer or fluoro-elastomer.

Claim 10. (Withdrawn – Currently Amended) The valve fuel cell system of claim 8, wherein the spring has a substantially straight sidewall.

Claim 11. (Withdrawn – Currently Amended) The valve fuel cell system of claim 8, wherein the spring has substantially wavy sidewall.

Claim 12. (Currently Amended) The valve fuel cell system of claim 6, wherein the spring constants of the spring in the valve components are substantially the same.

Claim 13. (Currently Amended) The valve fuel cell system claim 6, wherein the spring constants of the spring in the valve components are substantially different.

Claim 14. (Currently Amended) The valve fuel cell system of claim 1, wherein the spring constant of the spring in the valve component connected to the fuel cell is lower than the spring constant of the spring in the valve component connected to the fuel supply.

Claim 15. (Currently Amended) The valve fuel cell system of claim 1, wherein the sealing member is an o-ring.

Claim 16. (Currently Amended) The valve fuel cell system of claim 15, wherein the internal seal is located between the o-ring and the slidable inner body.

Claim 17. (Withdrawn – Currently Amended) The valve fuel cell system of claim 1, wherein the sealing member is a sealing face.

Claim 18. (Withdrawn – Currently Amended) The valve fuel cell system of claim 17, wherein the sealing face is positioned on a front surface of the slidable inner body and the internal seal is located between the sealing face and a portion of the housing.

Claim 19. (Withdrawn – Currently Amended) The valve fuel cell system of claim 18, wherein the portion of the housing is a lip.

Claim 20. (Withdrawn – Currently Amended) The valve fuel cell system of claim 17, wherein the sealing face is positioned on the housing and the internal seal is between the sealing face and the slidable inner body.

Claim 21. (Withdrawn – Currently Amended) The valve fuel cell system of claim 1, wherein the sealing member is an elastomeric ball.

Claim 22. (Currently Amended) The valve fuel cell system of claim 1, wherein the inter-component seal is formed by a portion of the housing of the first valve component and the sealing member of the second valve component.

Claim 23. (Currently Amended) The valve fuel cell system of claim 1, wherein the inter-component seal is formed by a portion of the housing of the second valve component and the sealing member of the first valve component.

Claim 24. (Withdrawn – Currently Amended) The valve fuel cell system of claim 1, wherein the inter-component seal is formed between the housing of the first valve component and the housing of the second housing component.

Claim 25. (Currently Amended) The valve fuel cell system of claim 1, wherein the inter-component seal is formed before any internal seal opens.

Claim 26. (Withdrawn – Currently Amended) The valve fuel cell system of claim 1, wherein the inter-component seal is formed after the internal seal of the valve component connected to the fuel cell opens.

Claim 27. (Currently Amended) The valve fuel cell system of claim 1, wherein the fluid flow path comprises the space between the housing and the slidable inner body.

Claim 28. (Currently Amended) The valve fuel cell system of claim 27, wherein the fluid flow path further comprises at least one channel defined on the slidable inner body.

Claim 29. (Currently Amended) The valve fuel cell system of claim 1, wherein the fluid flow path comprises at least one channel defined on one of the slidable inner bodies.

Claim 30. (Currently Amended) The valve fuel cell system of claim 1, wherein the fluid flow path comprises a plurality of channels defined on the slidable inner body of both valve components.

Claim 31. (Withdrawn – Currently Amended) The valve fuel cell system of claim 1, wherein the valve further comprises a liquid retention material surrounding the first and second valve components.

Claim 32. (Withdrawn – Currently Amended) The valve fuel cell system of claim 1, wherein the valve further comprises a liquid retention material within at least one of the valve components.

Claim 33. (Withdrawn – Currently Amended) The valve fuel cell system of claim 32, wherein the filler material is located in the downstream direction from the internal seal of the valve component.

Claim 34. (Currently Amended) The valve fuel cell system of claim 1, wherein the valve further comprises a retainer to keep the two valve components in the connected position.

Claim 35. (Withdrawn – Currently Amended) The valve fuel cell system of claim 34, wherein the retainer is a snap-on retainer.

Claim 36. (Withdrawn – Currently Amended) The valve fuel cell system of claim 34, wherein the retainer comprises a spring arm connected to the first valve component, a head disposed at the end of the arm and a receiving cavity defined on the second valve component, said cavity is sized and dimensioned to receive said head.

Claim 37. (Withdrawn – Currently Amended) The valve fuel cell system of claim 1, wherein one of the internal seals is opened by a pump.

Claim 38. (Withdrawn – Currently Amended) The ~~valve~~ fuel cell system of claim 1, wherein one of the internal seals is provided by a pump.

Claim 39. (Withdrawn – Currently Amended) The ~~valve~~ fuel cell system of claim 1, wherein at least one of the valve components comprises a second internal seal.

Claim 40. (Withdrawn – Currently Amended) The ~~valve~~ fuel cell system of claim 39, wherein the second internal seal is provided by a closed washer.

Claim 41. (Withdrawn – Currently Amended) The ~~valve~~ fuel cell system of claim 39, wherein the second internal seal is provided by a duckbill valve.

Claim 42. (Withdrawn – Currently Amended) The ~~valve~~ fuel cell system of claim 41, wherein the duckbill valve is sized and dimensioned to limit access to said valve component.

Claim 43. (Withdrawn – Currently Amended) The ~~valve~~ fuel cell system of claim 1, wherein the housing of at least one valve component comprises a nozzle sized and dimensioned to limit access to the internal seal.

Claim 44. (Withdrawn – Currently Amended) The ~~valve~~ fuel cell system of claim 1, wherein the housing of at least one valve component comprises a sleeve covering the housing and the sleeve is sized and dimensioned to limit access to the internal seal.

Claim 45. (Currently Amended) The ~~valve~~ fuel cell system of claim 1, wherein the fuel supply comprises a fuel cartridge.

Claim 46. (Currently Amended) The ~~valve~~ fuel cell system of claim 1, wherein the fuel supply comprises a fuel container.

Claim 47. (Currently Amended) The valve fuel cell system of claim 1, wherein the fuel supply comprises a fuel line.

Claim 48. (Withdrawn – Currently Amended) The valve fuel cell system of claim 1, wherein at least one valve component is initially covered by a covering member and the covering member is removed before the valve components are connected to each other.

Claim 49. (Withdrawn – Currently Amended) The valve fuel cell system of claim 48, wherein the covering member comprises a cap.

Claim 50. (Withdrawn – Currently Amended) The valve fuel cell system of claim 49, wherein the covering member comprises a film.

Claim 51-78. (Canceled)

Claim 79. (Withdrawn) A valve comprising:

 a first valve component connectable to one of either a fuel supply or a fuel cell,
 a second valve component connectable to the other of either a fuel supply or a fuel cell,
 wherein the first valve component comprises a housing and a biased slidable inner body, and wherein the slidable inner body cooperates with a sealing member to form an internal seal in the first valve component, and the second valve component comprises a duckbill valve;

 wherein during connection the housing of the first valve component enters the duckbill valve to open the internal seal of the duckbill valve, and first valve component and the duckbill valve form an inter-component seal at least before the internal seals open to create a fluid flow path through the valve.

Claim 80. (Withdrawn) The valve of claim 79, wherein a pump opens the internal seal in the first valve component.

Claim 81. (Withdrawn) The valve of claim 79, wherein the duckbill valve comprises a plurality of wipers that form at least one chamber with the outer surface of the housing of the first valve component and wherein a pressurized liquid can expand in the chamber.

Claim 82. (Withdrawn) The valve of claim 79, wherein the duckbill valve comprises a retention material to absorb liquid.

Claim 83. (Withdrawn) The valve of claim 79, wherein the duckbill valve comprises an additive capable of mixing with the fuel.

Claim 84. (Withdrawn) The valve of claim 79, wherein the second valve component further comprises a housing and a biased slidable inner body, and wherein the slidable inner body cooperates with a sealing member to form an internal seal in the second valve component.

Claim 85. (Withdrawn) A valve comprising:

 a first valve component connectable to one of either a fuel supply or a fuel cell,
 a second valve component connectable to the other of either a fuel supply or a fuel cell,
 wherein the first valve component connects to the second valve component to form a fluid flow path through the valve, and
 wherein the valve further comprises a retention material capable of absorbing liquid remaining in the valve when the first valve component disconnects from the second valve component.

Claim 86. (Withdrawn) A valve comprising:

 a first valve component connectable to one of either a fuel supply or a fuel cell,
 a second valve component connectable to the other of either a fuel supply or a fuel cell,

wherein the first valve component connects to the second valve component to form a fluid flow path through the valve and at least one of the valve components comprises an internal seal and a fluid retention material capable of retaining liquid.

Claim 87. (Withdrawn) The valve of claim 86, wherein the retention material is located in front of the internal seal.

Claim 88. (Withdrawn) The valve of claim 86, wherein the retention material is located in behind the internal seal.

Claim 89. (Withdrawn) A valve comprising:

a first valve component connectable to one of either a fuel supply or a fuel cell,
a second valve component connectable to the other of either a fuel supply or a fuel cell,
wherein the first valve component connects to the second valve component to form a fluid flow path through the valve and wherein one of the valve components comprises an internal seal formed by a slidable inner body biased against a sealing member and the other valve component comprises an internal seal provided by a pump.

Claim 90. (Withdrawn) A valve comprising:

a first valve component connectable to one of either a fuel supply or a fuel cell,
a second valve component connectable to the other of either a fuel supply or a fuel cell,
wherein the first valve component connects to the second valve component to form a fluid flow path through the valve and at least one valve component comprises an internal seal and a leading member sized and dimensioned to limit access to the internal seal.

Claim 91. (Withdrawn) The valve of claim 90, wherein the leading member is a nozzle.

Claim 92. (Withdrawn) The valve of claim 90, wherein the leading member is an outer sleeve.

Claim 93. (Withdrawn) The valve of claim 90, wherein the leading member is sized and dimensioned to limit access to the internal seal by a user's finger.

Claim 94. (Withdrawn) The valve of claim 90, wherein the leading member is sized and dimensioned to limit access to the internal seal the pulp of a user's finger.

Claim 95. (Withdrawn) The valve of claim 90, wherein the inner diameter of the leading member is about 10 mm or less.

Claim 96. (Withdrawn) The valve of claim 95, wherein the inner diameter of the leading member is about 5 mm or less.

Claim 97. (Withdrawn) The valve of claim 90, wherein the depth of the leading member is about 2 mm or more.

Claim 98. (Withdrawn) The valve of claim 97, wherein the depth of the leading member is about 5 mm or more.

Claim 99. (Currently Amended) The valve fuel cell system of claim 1, wherein ~~the biasing force in the valve components are different~~ each valve component has a different biasing force.

Claim 100. (New) The fuel cell system of claim 13, wherein the spring constant of the spring in the valve component connected to the fuel supply is lower than the spring constant of the spring in the valve component connected to the fuel cell.

Claim 101. (New) A valve comprising:

a first valve component connectable to one of either a fuel supply or a fuel cell,
a second valve component connectable to the other of either a fuel supply or a fuel cell,

wherein each valve component comprises a housing and a slidable inner body biased by a spring, wherein the slidable inner body cooperates with a sealing member to form an internal seal in each valve component, and wherein the spring constant of the spring in the valve component connecting the fuel cell is lower than the spring constant of the spring in the valve component connected to the fuel supply so that the valve component connecting to the fuel cell opens before the other valve component opens.

Claim 102. (New) The valve of claim 101, wherein during connection the first valve component and the second valve component form an inter-component seal at least before the internal seals open to create a fluid flow path through the valve.

Claim 103. (New) The valve of claim 101, wherein the slidable inner body comprises a pushrod.

Claim 104. (New) The valve of claim 101, wherein the spring is made from stainless steel or elastomeric material.

Claim 105. (New) The valve of claim 101, wherein the sealing member is an o-ring.

Claim 106. (New) The valve of claim 106, wherein the internal seal is located between the o-ring and the slidable inner body.

Claim 107. (New) The valve of claim 102, wherein the inter-component seal is formed by a portion of the housing of the first valve component and the sealing member of the second valve component.

Claim 108. (New) The valve of claim 102, wherein the inter-component seal is formed by a portion of the housing of the second valve component and the sealing member of the first valve component.

Claim 109. (New) The valve of claim 102, wherein the inter-component seal is formed before any internal seal opens.

Claim 110. (New) The valve of claim 101, wherein the fluid flow path comprises the space between the housing and the slidable inner body.

Claim 111. (New) The valve of claim 101, wherein the fluid flow path comprises at least one channel defined on the slidable inner body.

Claim 112. (New) The valve of claim 101, wherein the valve further comprises a retainer to keep the two valve components in the connected position.

Claim 113. (New) The valve of claim 101, wherein the fuel supply comprises a fuel cartridge, a fuel container, or a fuel line.

Claim 114. (New) The valve of claim 101, wherein the valve component connecting to the fuel supply is initially covered by a covering member and the covering member is removed before the valve components are connected to each other.